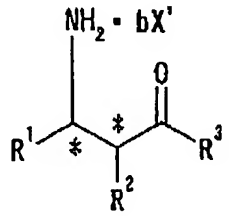
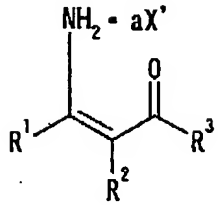
Amendments to the claims

1. (Currently amended) A method for producing an optically active β-amino acid of formula (2),



(2)

wherein b is 0 or 1; the symbol * shows that the carbon atom is a chiral carbon; R^1 is a hydrogen atom, an alkyl group, a substituted alkyl group, a cycloalkyl group, a substituted cycloalkyl group, an aralkyl group, a substituted aralkyl group, an aryl group, a substituted aryl group, an alkoxy group, a substituted alkoxy group, an aralkyloxy group, a substituted aralkyloxy group, an aryloxy group or a substituted aryloxy group; R^2 is a hydrogen atom, an alkyl group, a substituted alkyl group, a cycloalkyl group, a substituted cycloalkyl group, an aralkyl group, a substituted aralkyl group, an aryl group, a substituted aryl group, an alkoxy group, a substituted alkoxy group, an aralkyloxy group, a substituted aralkyloxy group, an aryloxy group, a substituted aryloxy group, an alkyloxycarbonyl group or an aralkyloxycarbonyl group; R^3 is an alkoxy group, a substituted alkoxy group, an aralkyloxy group, a substituted aralkyloxy group, an aryloxy group, a substituted aryloxy group, an amino group or a substituted amino group, X' is an acid, and R^1 and R^2 or R^2 and R^3 may be combined together to form a ring, provided that R^1 and R^2 are not a hydrogen atom simultaneously, provided that R^1, R^2 and R^3 are not substituted with a heterocyclic or heteroaryl ring, provided that R^1 and R^2 are not combined to form a heterocyclic or heteroaryl ring, and provided that R^2 and R^3 are not combined to form a heterocyclic or heteroaryl ring, which comprises contacting an enamine of formula (1),



(1)

wherein R^1, R^2, R^3 and X' have the same meanings as described above, and a is 0 or 1, with hydrogen and a transition metal complex, wherein the transition metal complex comprises a metal which belongs to the eighth group of the periodic table to produce the optically active β-amino acid of formula (2).

2. (Previously presented) The method as claimed in claim 1, wherein the enamine of formula (1) and hydrogen are contacted in the presence of an acid.

3. (Previously presented) The method as claimed in claim 1, wherein the enamine of formula (1) and hydrogen are contacted in the presence of a fluorine-containing aliphatic alcohol.

4-6. (Cancelled)

7. (Previously presented) The method as claimed in claim 1, wherein the transition metal complex has a chiral ligand.

8. (Original) The method as claimed in claim 7, wherein the chiral ligand is a chiral phosphine ligand.

9. (Previously presented) The method as claimed in claim 1, wherein the enamine of formula (1) and hydrogen is contacted in the presence of an acid and a fluorine-containing aliphatic alcohol.

10-12. (Cancelled)

13. (Previously presented) The method as claimed in claim 1, wherein the transition metal complex is represented by the formula (7):

$$M_mL_nX_pY_q \qquad (7)$$

wherein, M is a transition metal of the VIII group, L is a chiral ligand, X is a halogen atom, a carboxylate group, an allyl group, 1,5-cyclooctadiene or norbornadiene, Y is a ligand, and m, n, p, and q are an integer of 0 to 5.

14. (Previously presented) The method as claimed in claim 1, wherein the transition metal complex is represented by the formula (8):

$$[M_mL_nX_pY_q]Z_s \qquad (8)$$

wherein, M is a transition metal of the VIII group, L is a chiral ligand, X is a halogen atom, a carboxylate group, an allyl group, 1,5-cyclooctadiene or norbornadiene, Y is a ligand, Z is an anion, and m, n, p, q, and s are an integer of 0 to 5.

15. (New) The method as claimed in claim 1, wherein the metal which belongs to the eighth group of the periodic table is ruthenium, rhodium, iridium, palladium or nickel.

16. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 3-amino-3-phenylacrylate and the optically active β-amino acid of formula (2) is methyl (S)-3-amino-3-phenylpropionate.

17. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is ethyl 3-amino-3-phenylacrylate and the optically active β-amino acid of formula (2) is ethyl (R)-3-amino-3-phenylpropionate.

18. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is ethyl 3-amino-3-phenylacrylate and the optically active β-amino acid of formula (2) is ethyl (S)-3-amino-3-phenylpropionate.

19. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is ethyl 3-amino-3-phenylacrylate methanesulfonate and the optically active β-amino acid of formula (2) is ethyl (S)-3-amino-3-phenylpropionate methanesulfonate.

20. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 3-aminocrotonate and the optically active β-amino acid of formula (2) is methyl (S)-3-aminobutanoate.

21. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 3-(n-butylamino)crotonate and the optically active β-amino acid of formula (2) is methyl 3-(n-butylamino)butanoate.

22. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 3-aminocrotonate and the optically active β-amino acid of formula (2) is methyl (R)-3-aminobutanoate methanesulfonate.

23. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 3-aminocrotonate p-toluenesulfonate and the optically active β-amino acid of formula (2) is methyl (S)-3-aminobutanoate p-toluenesulfonate.

24. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 2-amino-1-cyclopentenecarboxylate and the optically active β-amino acid of formula (2) is methyl (-)-cis-2-aminocyclopentanecarboxylate.

25. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is methyl 3-amino-3-thiophen-2-yl-acrylate and the optically active β-amino acid of formula (2) is methyl (R)-3-amino-3-thiopen-2-yl-propionate methanesulfonate or methyl (R)-3-amino-3-thiophen-2-yl-propionate.

26. (New) The method as claimed in claim 1, wherein the enamine of formula (1) is ethyl 4-benzyloxy-3-amino-2-butenoate and the optically active β-amino acid of formula (2) is methyl (-)-4-benzyloxy-3-amino-butanoate.